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Skeleton -- Side View

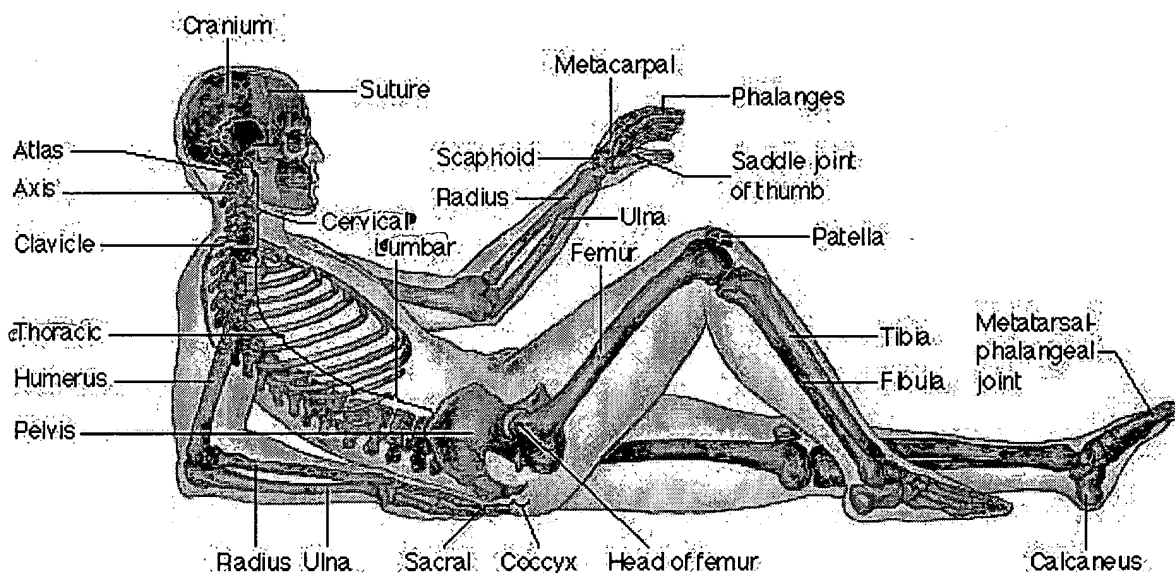


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April 29, 2003

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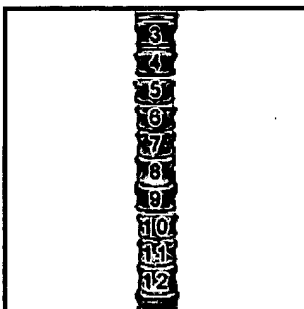
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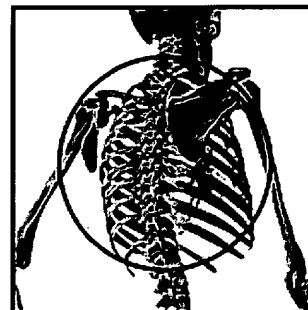
The Thoracic Spine

Composed of 12 vertebrae, the Thoracic Spine is the longest part of your back. It is often referred to as the middle back and each of the vertebrae has a rib attached to it.

Nerves that exit between vertebrae in the Thoracic Spine control muscles, other surface tissue, and internal organs. Surface areas of these nerves include arms from the elbow down, hands, fingers, and muscles of the middle back, the chest, and the ribcage. Subluxations here can cause pain and numbness as well as other musculoskeletal

problems.

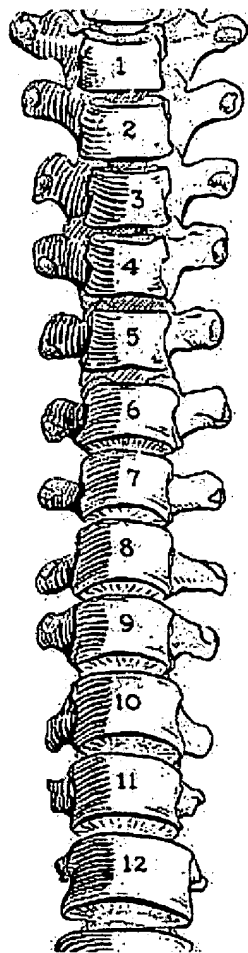
Nerves passing through the Thoracic Spine control important parts of the sympathetic nervous system including the heart, lungs, bronchial tubes, gallbladder, liver, stomach, pancreas, spleen, adrenal glands, kidneys, and small intestines. Subluxations that affect these organs are potentially very serious. Systemic problems include asthma, some problems with the heart, bronchitis, elevated or low blood pressure, ulcers, allergies, kidney trouble, and digestive problems. Often, a subluxation in the Thoracic Spine will go undetected for a long time before being noticed or treated.

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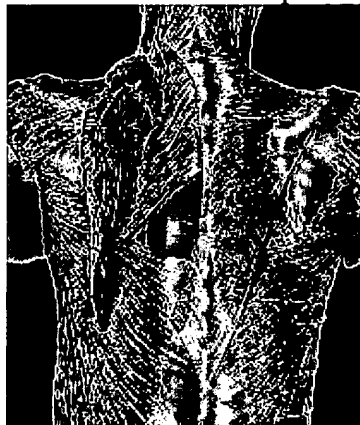
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The Thoracic Spine



The Thoracic Spine, commonly referred to as your middle back, consists of 12 vertebrae, (T1 - T12). This is the longest portion of your back. Each of these vertebrae has a pair of ribs attached to them. The nerves that exit out between these vertebrae go to muscles and other surface tissues as well as internal organs.

Some of the surface areas these nerves go to include parts of the arms from the elbows down, the hands, and fingers. Also the muscles of the middle back, the chest muscles, and muscles of the rib cage are supplied by nerves that exit out from this area of the spine.

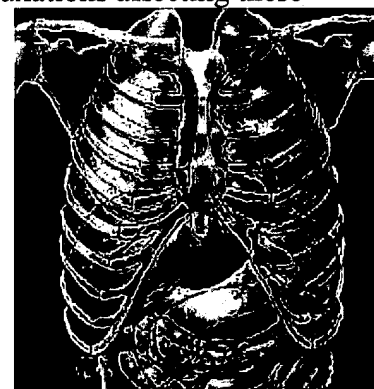
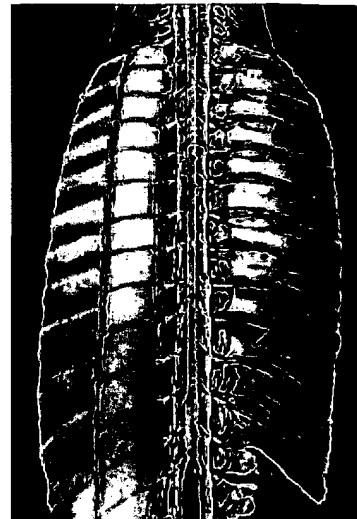


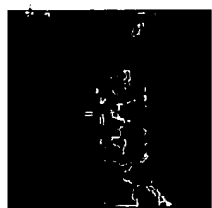
Pain or numbness and other musculoskeletal problems may be just some of the possible results from subluxations affecting these areas and tissues.

The internal organs supplied by nerves from the thoracic spine include much of the body parts supplied by the sympathetic nervous system. This portion of the nervous system innervates many of the organs in the chest and abdomen including, the heart, lungs, bronchial tubes, gallbladder, liver, stomach, pancreas, spleen, adrenal glands, kidneys, and small intestines. Subluxations affecting these

organs can lead to a large list of functional and systemic problems including, asthma, certain heart problems, bronchitis, blood pressure problems, ulcers, allergies, kidney trouble, and digestive problems, to name only a

few. Most subluxations affecting these areas go undetected for a long time before a health problem is ever noticed.





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The Thoracic Spine

The thoracic spine, commonly referred to as your middle back, consists of 12 vertebrae (T1-T12). This is the longest portion of your back.

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Some of the surface areas these nerves go to include parts of the arms from the elbows down, the hands, and fingers. Also, the muscles of the middle back, the chest muscles, and muscles of the rib cage are supplied by nerves that exit from this area of the spine.

Pain or numbness and other musculoskeletal problems may be just some of the possible results from subluxations affecting these areas and tissues.

The internal organs supplied by nerves from the thoracic spine include much of the body parts supplied by the sympathetic nervous system. This portion of the nervous system innervates many of the organs in the chest and abdomen, including:

- Heart
- Lungs
- Bronchial tubes
- Gallbladder
- Liver
- Stomach
- Pancreas
- Spleen
- Adrenal glands
- Kidneys
- Small intestines



**C1-C7
Upper
Cervic:
Spine**

**C3-C7
Lower
Cervic:
Spine**

**T1-T12
Thorac
Spine**

**L1-L5
Lumb:
Spine**

**Sacrum :
Coccy**

Subluxations affecting these organs can lead to a large list of functional and systemic problems, including:

- Asthma
- Certain heart problems
- Bronchitis
- Blood pressure problems
- Ulcers
- Allergies
- Kidney trouble
- Digestive problems

Most subluxations affecting these areas go undetected for a long time before a health problem is ever noticed.

Click on an area of the spine or corresponding text for more information.

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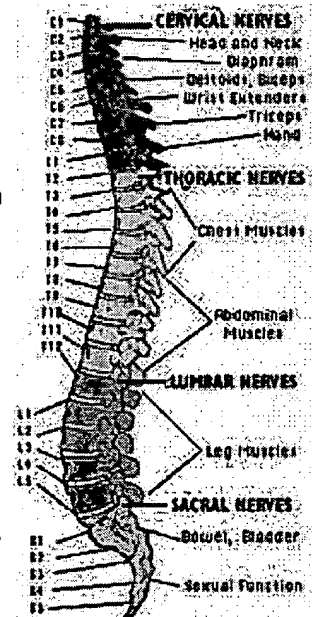
MEDICAL INFORMATION

Structure of the back

The human back is an amazing mechanical device. It is strong enough to support our entire body yet supple and flexible enough to allow us freedom of movement.

The vertebral column (spine) forms the major part of the skeleton. The spine is made up of 33 bones called vertebrae, 24 of which are moveable - providing flexibility to the spine. The vertebrae form 3 natural curves, the cervical (neck), the thoracic (middle back) and the lumbar (lower back). The body of each vertebra carries the weight of the vertebrae above it (including the skull) while the arch provides a canal-like area to accommodate and protect the spinal cord. The vertebrae are stacked on top of each other to form a column on the front and a bony canal in the back. The vertebrae in each region have different characteristics which relate to their different functions.

- The 7 cervical vertebrae are the first (upper) seven in the vertebral column. 2 specialised vertebrae at the base of the skull, the atlas and the axis, allow the head to rotate.
- The 12 thoracic vertebrae which form the upper back provide attachment for 12 pairs of ribs. The thoracic region is hence more stable and does not allow as much movement as compared with the cervical and lumbar regions.
- The 5 lumbar vertebrae form the lower back, or the 'small of the back'. They are designed to be incredibly strong yet allow flexibility for movement, and they connect to the sacrum at the top of the buttocks.
- The sacrum comprises 5 bones fused together and joins to the pelvis, a bony basin to protect the bladder and reproductive organs.
- The coccyx, or tailbone, is a semi-flexible series of 4 vertebrae (may be 3 or 5 vertebrae). The coccyx provides no support to the vertebral column however does provide an attachment for muscles and ligaments.



Each vertebra is named according to the region of the spine it is in and is given a number starting from the top, so the top vertebra in the lumbar region is called L1 and the bottom vertebra in the lumbar region is called L5.

Between each vertebra is a disc which acts as a shock absorber to cushion forces which are transmitted up or down the vertebral column. Each disc consists of a tough outer layer of cartilage and elastic tissue surrounding a soft, pulpy centre known as the nucleus.

The disc provides the strongest attachment between the vertebrae. The vertebrae are also joined to one another at two facet joints, one on each side. The facet joints help to guide the movement of the spine.

The vertebrae are also held together by tough fibrous bands called ligaments, and muscles are attached to the vertebrae by bands of tissue called tendons. Together they help to support and stabilise the spine and help to protect its delicate nerves.

The main movements of the spine are flexion (forward bending), extension (backward bending), lateral flexion (sideways bending) and rotation. These movements are due to relatively small movements between adjacent

(sideways bending) and rotation. These movements are due to relatively small movements between adjacent vertebrae. Different regions of the spine permit slightly different ranges of movement, for example the thoracic region is more stable due to the attachment to the rib cage while movements are freer in the lumbar and cervical regions.

There are many muscles which act on the spine to produce movement and help to maintain posture. The main muscles groups are the flexors and the extensors. The extensors comprise small and large muscles which allow the body to straighten up. The flexor muscles, which include the abdominal muscles, are in front of the spine and allow us to bend forward and provide support to the back.

The large openings in each vertebra line up to form a long hollow canal called the vertebral canal. The spinal cord runs through this canal. Spinal nerves are attached to the spinal cord and exit the vertebral canal at different level in the spine through spaces between the vertebrae. The spinal cord starts at the base of the brain and usually ends in the upper lumbar region where the remaining nerves branch out and exit the vertebral canal. The spinal cord serves as the primary nerve pathway to and from the brain.

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